

Ser. No. 09/994,247

August 25, 2003

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Amendments to Claims

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- 1 1. (currently further amended) A power amplifier system comprising:  
2 a plurality of amplifiers, each of which includes an input that is commonly coupled to a system  
3 input port, and each of which includes an output;  
4 a plurality of primary transformer windings, each of which is coupled to the output of one of the  
5 plurality of amplifiers; and  
6 a single secondary transformer winding that is inductively coupled to all of said primary  
7 transformer windings and sums coupled flux from each of said primary transformer windings and which  
8 provides a system output port to which a load may be coupled.
- 1 2. (original) A power amplifier system as claimed in claim 1, wherein said each of said primary  
2 transformer windings provides at least substantially the same number  $N$  of winding turns so that the  
3 turns ratio from each primary transformer winding to the secondary transformer winding is  $N:1$ .
- 1 3. (original) A power amplifier system as claimed in claim 2, wherein the current provided by  
2 each amplifier is  $i_1 = i_2 / (mN)$  where  $i_2$  is the current in the secondary transformer winding, and  $m$  is  
3 the number of the plurality of primary transformer windings.
- 1 4. (original) A power amplifier as claimed in claim 2, wherein each of said primary transformer  
2 windings provides exactly the same number  $N$  of winding turns.
- 1 5. (original) A power amplifier as claimed in claim 2, wherein said system permits mismatch in  
2 the number of turns of each of said primary transformer windings.

1 6. (previously amended) A power amplifier system as claimed in claim 1, wherein said plurality of  
2 amplifiers are spatially distributed on a circuit board to reduce localized heating on the circuit board.

1 7. (original) A power amplifier system as claimed in claim 1, wherein system includes two  
2 primary transformer windings.

1 8. (original) A power amplifier system as claimed in claim 1, wherein said system includes three  
2 primary transformer windings.

1 9. (original) A power amplifier system as claimed in claim 1, wherein said system includes four  
2 primary transformer windings.

1 10. (currently further amended) A power amplifier system comprising:  
2 a plurality of  $m$  amplifiers, each of which includes an input that is commonly coupled to a  
3 system input port, and each of which includes an output;  
4 a plurality of  $m$  primary transformer windings, each of which has substantially the same number  
5  $N$  of windings, and each of which is coupled to the output of one of the plurality of amplifiers; and  
6 a single secondary transformer winding that is inductively coupled to all of said primary  
7 transformer windings and sums coupled flux from each of said primary transformer windings such that  
8 the turns ratio from each primary transformer winding to the secondary transformer winding is  $N:1$ .

1 11. (original) A power amplifier system as claimed in claim 10, wherein the current provided by  
2 each amplifier is  $i_1 = i_2 / (mN)$  where  $i_2$  is the current in the secondary transformer winding.

1 12. (currently further amended) A power amplifier system comprising:

2 a plurality of  $m$  primary transformer windings, each of which has substantially the same number  
3  $N$  of windings;

4 at least one amplifier that includes an input that is coupled to a system input port and includes an  
5 output that is coupled to at least one of said plurality of  $m$  primary transformer windings; and

6 a single secondary transformer winding that is inductively coupled to all of said primary  
7 transformer windings and sums coupled flux from each of said primary transformer windings such that  
8 the turns ratio from each primary transformer winding to the secondary transformer winding is  $N:1$ .

1 13. (original) A power amplifier system as claimed in claim 12, wherein the current provided to  
2 each primary transformer winding is  $i_1 = i_2 / (mN)$  where  $i_2$  is the current in the secondary transformer  
3 winding.

1 14. (previously amended) A power amplifier system as claimed in claim 12, wherein said system  
2 further includes a plurality of amplifiers that are spatially distributed on a circuit board to reduce  
3 localized heating on the circuit board.

1 15. (previously canceled). }

1 16. (currently amended) A power amplifier system comprising:

2 a plurality of  $m$  primary transformer windings, each of which has substantially the same number  
3  $N$  of windings; and

4 a single secondary transformer winding that is inductively coupled to all of said primary  
5 transformer windings and sums coupled flux from each of said primary transformer windings such that  
6 the turns ratio from each primary transformer winding to the secondary transformer winding is  $N:1$ ,  
7 wherein said system further includes a plurality of amplifiers, each of which is coupled to one of the  
8 plurality of primary transformer windings.

1 17. (currently amended) A power amplifier system comprising:

2 a first primary transformer winding including a positive input port and a negative input port for  
3 providing a first current through said first primary transformer winding in a first positive direction;

4 a second primary transformer winding including a positive input port and a negative input port  
5 for providing a second current through said second primary transformer winding in a second positive  
6 direction;

7 a secondary transformer winding that includes a positive output port and a negative output port  
8 and receives an inductively coupled current from said first and second primary transformer windings;  
9 and

10 power amplifier circuitry that couples said first and second primary transformer windings and  
11 said [second] secondary transformer winding such that said first and second positive directions are the  
12 same with respect to said secondary transformer winding, providing a summation of said first and  
13 second currents at said secondary transformer winding.

1 18. (previously added) A power amplifier system as claimed in claim 1, wherein said plurality of  
2 amplifiers are spatially distributed on an integrated circuit chip to reduce localized heating on the  
3 integrated circuit chip.

1 19. (previously added) A power amplifier system as claimed in claim 12, wherein said system  
2 further includes a plurality of amplifiers that are spatially distributed on an integrated circuit chip to  
3 reduce localized heating on the integrated circuit chip.

1 20. (previously added) A power amplifier system as claimed in claim 1, wherein said input to each  
2 of said amplifiers is a differential input.

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21. (previously added) A power amplifier system as claimed in claim 1, wherein said output of each
- of said amplifiers is a differential output.
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